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Relevance scale ☐ ☐ ☐ ☐ ☐**1** [Bit-split string-matching engines for intrusion detection and prevention](#)

Lin Tan, Brett Brotherton, Timothy Sherwood

March 2006 **ACM Transactions on Architecture and Code Optimization (TACO)**, Volume 3 Issue 1**Publisher:** ACM PressFull text available: pdf(661.21 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Network Intrusion Detection and Prevention Systems have emerged as one of the most effective ways of providing security to those connected to the network and at the heart of almost every modern intrusion detection system is a string-matching algorithm. String matching is one of the most critical elements because it allows for the system to make decisions based not just on the headers, but the actual content flowing through the network. Unfortunately, checking every byte of every packet to see if ...

**Keywords:** String-matching architecture, security, state machine splitting**2** [A High Throughput String Matching Architecture for Intrusion Detection and Prevention](#)

Lin Tan, Timothy Sherwood

May 2005 **ACM SIGARCH Computer Architecture News , Proceedings of the 32nd annual international symposium on Computer Architecture ISCA '05**, Volume 33 Issue 2**Publisher:** IEEE Computer Society, ACM PressFull text available: pdf(205.60 KB) Additional Information: [full citation](#), [abstract](#), [cited by](#), [index terms](#)

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**3** [Session 7C: Tabulation based 4-universal hashing with applications to second moment estimation](#)

Mikkel Thorup, Yin Zhang

January 2004 **Proceedings of the fifteenth annual ACM-SIAM symposium on Discrete algorithms SODA '04****Publisher:** Society for Industrial and Applied MathematicsFull text available: pdf(190.58 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We show that 4-universal hashing can be implemented efficiently using tabulated 4-universal hashing for characters, gaining a factor of 5 in speed over the fastest existing


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### 1 [Real-time shading](#)



Marc Olano, Kurt Akeley, John C. Hart, Wolfgang Heidrich, Michael McCool, Jason L. Mitchell, Randi Rost

 August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04**

Publisher: ACM Press

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Real-time procedural shading was once seen as a distant dream. When the first version of this course was offered four years ago, real-time shading was possible, but only with one-of-a-kind hardware or by combining the effects of tens to hundreds of rendering passes. Today, almost every new computer comes with graphics hardware capable of interactively executing shaders of thousands to tens of thousands of instructions. This course has been redesigned to address today's real-time shading capabilities ...

### 2 [An open-source CVE for programming education: a case study: An open-source CVE for programming education: a case study](#)



Andrew M. Phelps, Christopher A. Egert, Kevin J. Bierre, David M. Parks

 July 2005 **ACM SIGGRAPH 2005 Courses SIGGRAPH '05**

Publisher: ACM Press

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### 3 [A programming language](#)

Kenneth E. Iverson

January 1962 Book

Publisher: John Wiley &amp; Sons, Inc.

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#### From the Preface

Applied mathematics is largely concerned with the design and analysis of explicit procedures for calculating the exact or approximate values of various functions. Such explicit procedures are called algorithms or programs. Because an effective notation for the description of programs exhibits considerable syntactic structure, it is called a programming language.

Much of applied mathematics, particularly the more recent computer-related areas which ...

### 4 [Artificial intelligence](#)



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Relevance scale ☐ ☐ ☐ ☐ ☐**1** [Artificial intelligence](#)Elaine Rich  
January 1983 Book**Publisher:** McGraw-Hill, Inc.Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [review](#)

The goal of this book is to provide programmers and computer scientists with a readable introduction to the problems and techniques of artificial intelligence (A.I.). The book can be used either as a text for a course on A.I. or as a self-study guide for computer professionals who want to learn what A.I. is all about.

The book was designed as the text for a one-semester, introductory graduate course in A.I. In such a course, it should be possible to cover all of the material in the boo ...

**2** [Cryptography and data security](#)Dorothy Elizabeth Robling Denning  
January 1982 Book**Publisher:** Addison-Wesley Longman Publishing Co., Inc.Full text available: pdf(19.47 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)**From the Preface (See Front Matter for full Preface)**

Electronic computers have evolved from exiguous experimental enterprises in the 1940s to prolific practical data processing systems in the 1980s. As we have come to rely on these systems to process and store data, we have also come to wonder about their ability to protect valuable data.

Data security is the science and study of methods of protecting data in computer and communication systems from unauthorized disclosure ...

**3** [The elements of nature: interactive and realistic techniques](#)

Oliver Deussen, David S. Ebert, Ron Fedkiw, F. Kenton Musgrave, Przemyslaw Prusinkiewicz, Doug Roble, Jos Stam, Jerry Tessendorf

August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04****Publisher:** ACM PressFull text available: pdf(17.65 MB) Additional Information: [full citation](#), [abstract](#)

This updated course on simulating natural phenomena will cover the latest research and production techniques for simulating most of the elements of nature. The presenters will provide movie production, interactive simulation, and research perspectives on the




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## 1 Artificial intelligence

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### 3 The elements of nature: interactive and realistic techniques



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Doug Roble, Jos Stam, Jerry Tessendorf

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G Myers - Journal of the ACM (JACM), 1999 - portal.acm.org

... other in different regions of the  $(k, )$  **input**-parameter space. ... we develop an  $O(n m/w)$  **bit-vector** algorithm for the approximate **string** matching problem ...Cited by 141 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)

[Deep packet inspection using parallel bloom filters - all 8 versions »](#)

S Dharmapurikar, P Krishnamurthy, TS Sproull, JW ... - IEEE Micro, 2004 - doi.ieeecomputersociety.org

... to programming; the filter takes as an **input** a **string** ... For this new **string**, the Bloom filter generates  $k$  hash values ... looks up the bits in the  $m$ -**bit vector** at the ...Cited by 162 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)

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K Abrahamson - SIAM J. Comput., 1987 - locus.siam.org

... Key words, **string** matching, regular expressions, time-space tradeoff ... one would like to know the influence of certain natural features of the **input** on the ...Cited by 121 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

[\[BOOK\] MONA: Monadic Second-Order Logic in Practice - all 5 versions »](#)

JG Henriksen... - brics.dk

... consider the **string**  $w = abaa$  and value assignment  $I = [ P \ 1 \ 7!f \ 0 ; \ 2 \ g ; P \ 2 \ 7! ; ] :$   
The set  $I ( P \ 1 ) = f \ 0 ; \ 2 \ g$  can be represented by the **bit** pattern 1010 ...Cited by 194 - [Related Articles](#) - [View as HTML](#) - [Web Search](#) - [BL Direct](#)

[Checking the correctness of memories - all 19 versions »](#)

M Blum, W Evans, P Gemmell, S Kannan, M Naor - Algorithmica, 1994 - Springer

... bits of reliable (and secret) memory to fingerprinting an **input** which is ... us to compute this hash function as the **string** to be hashed is revealed **bit** by **bit**. ...Cited by 104 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)

[\[BOOK\] Regular Languages - all 3 versions »](#)

SS Yu, Dept. of Computer Science, University of ... - 1996 - csd.uwo.ca

... mod 3). We use  $3(x)$  to denote the value, modulo 3, of the binary **string**  $x$ . For example,  $3(100) = 1$  and  $3(1011) = 2$ . Consider an arbitrary **input string**  $w = a \dots$ Cited by 192 - [Related Articles](#) - [View as HTML](#) - [Web Search](#) - [Library Search](#)

[Quantum entanglement and the communication complexity of the inner product function - all 18 versions »](#)

R Cleve, W van Dam, M Nielsen, A Tapp - Proceedings of 1st NASA QCQC conference - Springer

... context, it can never yield more than one **bit** of information ... P, Bob never changes the state of his **input** qubits  $|y \dots$  Note that the **vector**  $\sqrt{2} \beta |M_{x,y,z} \rangle$  is ...Cited by 71 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)

[\[PS\] A fast and practical \*\*bit-vector\*\* algorithm for the Longest Common Subsequence problem - all 13 versions »](#)

M Crochemore, CS Iliopoulos, YJ Pinzon, JF Reid - Information Processing Letters, 2001 - dcs.kcl.ac.uk

... the corresponding solution to the **string** editing problem ... algorithms have been designed, ie **input**- or output ... of two strings by using **bit-vector** operations which ...Cited by 25 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)


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V King - Algorithmica, 1997 - Springer

...  $j$   $k$   $i$  is the  $k$   $i$   $th$  subword of  $J$ . **weight**  $r$  takes as **input** a **string** of length  $r$  and outputs the number of bits set to 1. **index**  $r$  takes an  $r$  **bit vector** with no ...

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**[WASP: A WSI Associative String Processor - all 3 versions »](#)**

RM Lea - The Journal of VLSI Signal Processing, 1991 - Springer

... 9 a **Vector** Data Buffer (for fully-overlapped data **input-output**) which run in parallel with the **string**, as shown ... All APEs share common 32-bit Data, 12-bit ...

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... is considered in this section where the statistical structure of the **input** is more ...

If  $p_{ij}$  is the probability of **string**  $j$ ,  $b_i$  denotes the  $i$ th **bit** of the ...

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**[A genetic algorithm for training recurrent neural networks - all 4 versions »](#)**

R Petridis, S Kazaplis, A Papaikonomou - Neural Networks, 1993. IJCNN'93-Nagoya. Proceedings of 1993 ..., 1993 - [ieeexplore.ieee.org](#)

...  $X_{m+1}(t) = 1$ , is an extra **input** that controls ... tries to find the optimum  $N$ -dimensional **weight vector** for the ... **weight** is encoded in a 16 **bit string** (an unsigned ...

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**[Lower bounds on the size of selection and rank indexes - all 4 versions »](#)**

PB Miltersen - Proceedings of the sixteenth annual ACM-SIAM symposium on ..., 2005 - [portal.acm.org](#)

...  $k$  are both copies of the same **bit** in the **input**  $x$ , we ...  $j = 1, \dots, m$  in increasing order while scanning the **string**  $r(x)$  ... that  $T(x) \in \{0, 1\}^m$  is a **bit vector** of Ham ...

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YM Chen, RM O'Connell - IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, 1997 - [ieeexplore.ieee.org](#)

... **weight vector** defined as is the **input vector** defined as ... each of which consists of a **string** of binary ... operations are illustrated for seven-bit chromosomes in Fig ...

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C McMillan, MC Mozer, P Smolensky - Proceedings of the 13th Annual Conference of the Cognitive ..., 1991 - [phil.canterbury.ac.nz](#)

... one **bit**, at most, in each  $k$ -**bit** subvector should be ... For example, using the eight-symbol alphabet, the **vector**  $c_i$  ... is an  $A$  in the first slot of the **input string**. ...

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WP Birmingham, RB Dannenberg, GH Wakefield, M ... - Ann Arbor - [music-ir.org](#)

... is represented by a 24-tuple and corresponding **bit vector**. ... true posterior probabilities (given the **input** query as ... The **string** for each query is then compared ...

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S Baluja, National Aeronautics and Space ... - 1995 - citeseer.comp.nus.edu.sg

... evaluate(N)  $V \leftarrow N$  Flip\_Random\_Bit is a function which returns a solution **string**

with only one **bit** changed from its **input** solution **string**. ...

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[On Some Cryptographic Properties of Rijndael - all 4 versions »](#)

S Kavut, MD Yücel - Proceedings of the International Workshop on Information ..., 2001 - Springer

...  $i$ ) the output difference **vector** called the "avalanche **vector**" is computed ... overall

output bits when only the  $i$ th **bit** in the **input string** is changed. ...

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[Efficient text fingerprinting via parikh mapping - all 5 versions »](#)

A Amir, A Apostolico, GM Landau, G Satta - Journal of Discrete Algorithms, 2003 - Elsevier

... time for mapping  $\phi$  to its LIFE **bit** notation is  $O$  ... can only solve Query 2 (for **input**

fingerprint  $\phi$  ... a number of applications, eg, approximate **string** searching in ...

[Cited by 18](#) - [Related Articles](#) - [Web Search](#)

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G Fahner, R Eckmiller - Neural Networks, 1994 - nero.uni-bonn.de

... order neuron, and performs an iterated process of **weight** elimination. ... where  $x$  denotes

the original **input vector**. ... In eqn.(1) the  $j$ th **bit** of is understood as ...

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[\[PDF\] Oblivious Transfer via McEliece's PKC and Permuted Kernels](#)

K Kobara, K Morozov, R Overbeck - eprint.iacr.org

... ways: 1) In the Rabin OT, the **input string** is either ... In more details, for transmitting

a **bit-string**  $m$ , the ... Now, if the error **vector** used for the encryption has ...

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[An improved error model for noisy channel spelling correction - all 13 versions »](#)

E Brill, RC Moore - Proceedings of the 38th Annual Meeting on Association for ..., 2000 - portal.acm.org

... Estimating FRXQW LVD **bit** tricky ... the trie and a particular position in the **input string**

s (this ... spelling correction based on generic **string** to **string** edits, and ...

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[BFT: Bit Filtration Technique for Approximate String Join in Biological Databases - all 3 versions »](#)

SA Aghili, D Agrawal, A El Abbadi - Proc. SPIRE, 2003 - Springer

... on search time, and error rate of **input** data on ... based on the exact matching of **string**

tuples, while ... BFT: **Bit** Filtration Technique for Approximate **String** Join ...

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C Leacock, G Towell, E Voorhees - Proceedings of the ARPA Workshop on Human Language ..., 1993 - acl.ldc.upenn.edu

... model, a token, was defined as any character **string**: a word ... devise some method for using the **input** features to ... Each context is translated into a **bit-vector**. ...

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[Cryptanalysis of stream ciphers with linear masking - all 13 versions »](#)

D Coppersmith, S Halevi, C Jutla - Advances in Cryptology-CRYPTO, 2002 - Springer

... 15] exploits the fact that some linear combination of the **input** and output ... such that for a randomly selected  $n$  **bit string**  $x$ ,  $\Pr[l(x, NF(x) \dots$  Therefore, the **bit**  $\xi$  ...

Cited by 60 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)
[Limit cycles of a perceptron - all 6 versions »](#)

M Schroder, W Kinzel - J. Phys. A: Math. Gen, 1998 - iop.org

... it can do so only if each **input string** ( $S$  | ... frequency  $q$  and phase  $\phi$  of the **weight vector** of the ... Numerical simulations showed that the **bit** sequences relax into ...

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M Schroeder, W Kinzel - Arxiv preprint cond-mat/9710010, 1997 - arxiv.org

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P Dasgupta, S Chattopadhyay, PP Chaudhuri, I ... - IEEE Transactions on Computers, 2001 - doi.ieeecs.org

... 3-neighborhood and requires only 2-**input XOR-gates** ... the scheme in [10] as test **string** length increases ... A. Rosenberg, "Exhaustive Generation of **Bit** Patterns with ...

Cited by 11 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)
[\[book\] An Empirical Comparison of Seven Iterative and Evolutionary Function Optimization Heuristics - all 18 versions »](#)

S Baluja, National Aeronautics and Space ... - 1995 - citeseer.comp.nus.edu.sg

... evaluate( $N$ )  $V \leftarrow N$  Flip\_Random\_Bit is a function which returns a solution **string** with only one **bit** changed from its **input** solution **string**. ...

Cited by 69 - [Related Articles](#) - [View as HTML](#) - [Web Search](#) - [Library Search](#)
[On Some Cryptographic Properties of Rijndael - all 4 versions »](#)

S Kavut, MD Yücel - Proceedings of the International Workshop on Information ..., 2001 - Springer

...  $i$ ) the output difference **vector** called the "avalanche **vector**" is computed ... overall output bits when only the  $i$ 'th **bit** in the **input string** is changed. ...

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**[A genetic algorithm for training recurrent neural networks - all 4 versions »](#)**

 R Petridis, S Kazaplis, A Papaikonomou - Neural Networks, 1993. IJCNN'93-Nagoya. Proceedings of 1993 ... , 1993 - [ieeexplore.ieee.org](#)

 ... are concatenated to form a solution **bit string** of  $N \times \dots$  the genotype is decoded to a **weight vector** and then ... which had to classify the **input** oscillation **frequency** ...

 Cited by 14 - [Related Articles](#) - [Web Search](#)
**[Neural network based generation of fundamental frequency contours](#)**

 MS Scordilis, JN Gowdy - Acoustics, Speech, and Signal Processing, 1989. ICASSP-89., ..., 1989 - [ieeexplore.ieee.org](#)

 ... coarticulation within each word expressed as a phonemic **string**. ... are presented in a 6-**bit** binary representation ... matrices for connections from the **input** layer to ...

 Cited by 22 - [Related Articles](#) - [Web Search](#)
**[Limit cycles of a perceptron - all 6 versions »](#)**

 M Schroder, W Kinzel - J. Phys. A: Math. Gen, 1998 - [iop.org](#)

 ... it can do so only if each **input string** ( $S$  | ... **frequency**  $q$  and phase  $\phi$  of the **weight vector** of the ... Numerical simulations showed that the **bit** sequences relax into ...

 Cited by 7 - [Related Articles](#) - [Web Search](#)
**[\[PDF\] Musart: Music Retrieval Via Aural Queries - all 6 versions »](#)**

 WP Birmingham, RB Dannenberg, GH Wakefield, M ... - Ann Arbor - [music-ir.org](#)

 ... is represented by a 24-tuple and corresponding **bit vector**. ... true posterior probabilities (given the **input** query as ... The **string** for each query is then compared ...

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**[\[PDF\] Limit cycles of a perceptron - all 4 versions »](#)**

 M Schroeder, W Kinzel - Arxiv preprint cond-mat/9710010, 1997 - [arxiv.org](#)

 ... solution it can do so only if each **input string** ( $S$  ...  $q$  and phase  $\phi$  of the **weight vector** of the ... Numerical simulations showed that the **bit** sequences relax into ...

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 N Iwakami, T Moriya, S Miki - Acoustics, Speech, and Signal Processing, 1995. ICASSP-95., ..., 1995 - [ieeexplore.ieee.org](#)

 ... such as harmonics, which are present in the **input**-signal spectrum. ... allocation, even if we use a constant **bit** allocation ... 0) a) U) z C,) #1: **String** #2: **Woodwind** #3 ...

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**[Active Power Line Conditioner with a Neural Network Control - all 3 versions »](#)**

 YM Chen, RM O'Connell - IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS, 1997 - [ieeexplore.ieee.org](#)

 ... **weight vector** defined as is the **input vector** defined as ... each of which consists of a **string** of binary ... operations are illustrated for seven-**bit** chromosomes in Fig ...

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**[Adaptive joint subband vector quantisation codec for handheld videophone applications - all 2 versions »](#)**

 TOC View - Electronics Letters, 2003 - [ieeexplore.ieee.org](#)

 ... average value of each **input** fi-ame and lcvl\_uf\_comprerrion ... taking into account the



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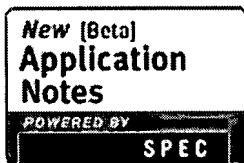
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- ☐ 1. **Full-custom CMOS realization of a high-performance binary sorting engine with linear area complexity**  
Demirci, T.; Hatirnaz, I.; Leblebici, Y.;  
[Circuits and Systems, 2003. ISCAS '03. Proceedings of the 2003 International Symposium on](#)  
Volume 5, 25-28 May 2003 Page(s):V-453 - V-456 vol.5  
Digital Object Identifier 10.1109/ISCAS.2003.1206314  
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- ☐ 2. **A compact modular architecture for the realization of high-speed binary sorting engines b: rank ordering**  
Hatirnaz, I.; Gurkaynak, F.K.; Leblebici, Y.;  
[Circuits and Systems, 2000. Proceedings. ISCAS 2000 Geneva. The 2000 IEEE International Symposium on](#)  
Volume 4, 28-31 May 2000 Page(s):685 - 688 vol.4  
Digital Object Identifier 10.1109/ISCAS.2000.858844  
[AbstractPlus](#) | Full Text: [PDF\(256 KB\)](#) IEEE CNF  
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- ☐ 3. **Integer and floating point matrix-vector multiplication on the reconfigurable mesh**  
Trahan, J.L.; Chun-Ming Lu; Vaidyanathan, R.;  
[Parallel Processing Symposium, 1996., Proceedings of IPPS '96, The 10th International](#)  
15-19 April 1996 Page(s):702 - 706  
Digital Object Identifier 10.1109/IPPS.1996.508135  
[AbstractPlus](#) | Full Text: [PDF\(444 KB\)](#) IEEE CNF  
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- ☐ 4. **Application of multi-zero artificial neural network to the design of an m-valued digital multi**  
Hu, C.-L.J.;  
[Multiple-Valued Logic, 1991., Proceedings of the Twenty-First International Symposium on](#)  
26-29 May 1991 Page(s):32 - 37  
Digital Object Identifier 10.1109/ISMVL.1991.130701  
[AbstractPlus](#) | Full Text: [PDF\(348 KB\)](#) IEEE CNF  
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- ☐ 5. **Rapid integrated-circuit reliability-simulation and its application to testing**  
Kubiak, K.; Fuchs, W.K.;



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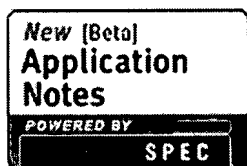
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- ☐ 1. **Conditional weighted universal source codes: second order statistics in universal coding**  
Effros, M.;  
[Acoustics, Speech, and Signal Processing, 1997. ICASSP-97., 1997 IEEE International Conferen](#)  
Volume 4, 21-24 April 1997 Page(s):2733 - 2736 vol.4  
Digital Object Identifier 10.1109/ICASSP.1997.595354  
[AbstractPlus](#) | Full Text: [PDF\(388 KB\)](#) IEEE CNF  
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- ☐ 2. **On the minimum description length principle for sources with piecewise constant paramet**  
Merhav, N.;  
[Information Theory, IEEE Transactions on](#)  
Volume 39, Issue 6, Nov. 1993 Page(s):1962 - 1967  
Digital Object Identifier 10.1109/18.265504  
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Volume 50, Issue 8, Aug. 2004 Page(s):1620 - 1635  
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- ☐ 4. **A Markov chain sequence generator for power macromodeling**  
Xun Liu; Papaeftymiou, M.C.;  
[Computer-Aided Design of Integrated Circuits and Systems, IEEE Transactions on](#)  
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Digital Object Identifier 10.1109/TCAD.2004.829819  
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Xun Liu; Papaeftymiou, M.C.;  
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- ☐ 1. **Switched prediction and quantization of LSP frequencies**  
Zarrinkoub, H.; Mermelstein, P.;  
[Acoustics, Speech, and Signal Processing, 1996. ICASSP-96. Conference Proceedings., 1996 IE International Conference on](#)  
Volume 2, 7-10 May 1996 Page(s):757 - 760 vol. 2  
Digital Object Identifier 10.1109/ICASSP.1996.543231  
[AbstractPlus](#) | Full Text: [PDF](#)(324 KB) IEEE CNF  
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- ☐ 2. **Joint wavelet transform and vector quantization for speech coding**  
Mandridake, E.; Najim, M.;  
[Circuits and Systems, 1993., ISCAS '93, 1993 IEEE International Symposium on](#)  
3-6 May 1993 Page(s):699 - 702 vol.1  
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- ☐ 3. **Subband/VQ coding of color images with perceptually optimal bit allocation**  
Van Dyck, R.E.; Rajala, S.A.;  
[Circuits and Systems for Video Technology, IEEE Transactions on](#)  
Volume 4, [Issue 1](#), Feb. 1994 Page(s):68 - 82, 101  
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- ☐ 4. **Very low bit-rate video coding using variable block-size entropy-constrained residual vector quantizers**  
Kwon, H.; Venkatramam, M.; Nasrabadi, N.M.;  
[Selected Areas in Communications, IEEE Journal on](#)  
Volume 15, [Issue 9](#), Dec. 1997 Page(s):1714 - 1725  
Digital Object Identifier 10.1109/49.650045  
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- ☐ 5. **A two codebook format for robust quantization of line spectral frequencies**  
Ramachandran, R.P.; Sondhi, M.M.; Seshadri, N.; Atal, B.S.;  
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| Ref # | Hits  | Search Query  | DBs   | Default Operator | Plurals | Time Stamp       |
|-------|-------|---|---|------------------|---------|------------------|
| S5    | 340   | S4 and entire   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | OFF     | 2006/03/24 15:51 |
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| S12   | 15    | S11 and ((bit near2 vector\$1) with (input with string\$1))   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | OFF     | 2006/03/28 11:34 |
| S14   | 0     | h785677.pn. and ((bit adj vector\$1) or non?alphanumeric or symbol\$1 or position\$1 or predetermined or determined or seconds or time\$1 or predex or frequency or statistical or weighting or weight\$1 or represent\$1 or email or e-mail or mobile or phone or number ) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | OFF     | 2006/03/28 13:15 |

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| S15 | 2  | "6785677".pn. and ((bit adj vector\$1) or non?alphanumeric or symbol\$1 or position\$1 or predetermined or determined or seconds or time\$1 or predex or frequency or statistical or weighting or weight\$1 or represent\$1 or email or e-mail or mobile or phone or number ) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/28 13:16 |
| S17 | 2  | "6499033".pn. and ((bit adj vector\$1) or non?alphanumeric or symbol\$1 or position\$1 or predetermined or determined or seconds or time\$1 or predex or frequency or statistical or weighting or weight\$1 or represent\$1 or email or e-mail or mobile or phone or number ) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/28 13:18 |
| S20 | 21 | S19 and @ad<"20031001"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/28 13:35 |
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| S32 | 6     | "065285".ap.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/28 14:21 |
| S34 | 2     | "5703581".pn.   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/28 14:31 |
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| S35 | 6     | "687218".ap.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/28 14:47 |
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| S45 | 77   | S43 and alphanumeric   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 12:57 |
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| S48 | 60   | S46 and (symbol or represent\$4 or email\$1 or address or number\$1)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 13:51 |

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| S51 | 3    | "687218".ap. and predetermined   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 14:26 |
| S53 | 1    | "687218".ap. and prefix  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:24 |
| S54 | 1    | "687218".ap. and (hierarchy or leaf)                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:25 |
| S55 | 0    | "5774588".pn. and (hierarchy or leaf)                                      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:31 |
| S37 | 1    | "5774588".pn. and (alphanumeric or non?alphanumeric)                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:31 |
| S58 | 127  | S57 and ((bit near2 vector\$1) with string\$1)                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:36 |
| S56 | 6946 | bit near2 vector\$1  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:36 |

## EAST Search History

|     |     |  |   |    |     |                  |
|-----|-----|--|---|----|-----|------------------|
| S13 | 127 | S11 and ((bit near2 vector\$1) with string\$1)               | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:36 |
| S60 | 0   | "4935870".pn. and hierarchy                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:42 |
| S61 | 0   | "4814972".pn. and hierarchy                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 16:46 |
| S63 | 2   | "4606002".pn. and (tree or vector or hierarchy)              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 17:03 |
| S62 | 2   | "6047283".pn. and (tree or vector or hierarchy)              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 17:03 |
| S59 | 36  | S58 and (hierarchy or tree\$1)                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 17:42 |
| S65 | 4   | S64 and ((logical or boolean) with (zero\$2 or non?zero\$2)) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 17:43 |
| S64 | 30  | S59 and (logical or boolean)                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/29 17:43 |

## EAST Search History

|     |       |   |   |    |     |                  |
|-----|-------|---|---|----|-----|------------------|
| S66 | 26806 | symbol\$1 with group\$1   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/30 11:52 |
| S68 | 120   | S67 and ((symbol\$1 with group\$1)<br>near3 assign\$4)                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/30 11:53 |
| S69 | 0     | S68 and (((symbol\$1 with group\$1)<br>near3 assign\$4) with (phone or<br>telephone)) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/30 11:54 |
| S71 | 3     | "111888".ap. and (symbol or assign<br>or group)                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/30 12:18 |
| S70 | 31    | S68 and (((symbol\$1 with group\$1)<br>near3 assign\$4) and (phone or<br>telephone))  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/03/30 12:18 |
| S72 | 2     | "5774588".pn.   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 14:26 |
| S6  | 6     | S5 and (bit near2 vector\$1)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 14:39 |
| S73 | 52507 | (wireless near3 device\$1) and<br>@ad<"20030801"                                      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 14:40 |

## EAST Search History

|     |    |  |   |    |     |                  |
|-----|----|--|---|----|-----|------------------|
| S76 | 2  | "6983310".pn.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 15:05 |
| S79 | 2  | "6801851".pn.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 15:06 |
| S78 | 0  | "68018581".pn.   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 15:06 |
| S77 | 2  | "7103550".pn.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 15:06 |
| S80 | 2  | "20020015061" and keyword\$1   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 15:36 |
| S75 | 29 | ((wireless near3 device\$1) with<br>(keyword\$1 ) ) and<br>@ad<"20030801"                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 15:36 |
| S74 | 2  | ((wireless near3 device\$1) with<br>(keyword\$1 near5 database\$1) )<br>and @ad<"20030801" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 15:52 |
| S81 | 8  | ((wireless near3 device\$1) with<br>(index\$3 near5 database\$1) ) and<br>@ad<"20030801"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 16:02 |

## EAST Search History

|     |         |  |   |    |     |                  |
|-----|---------|--|---|----|-----|------------------|
| S82 | 1       | ((portable near3 device\$1) with<br>(keyword\$1 near5 database\$1) )<br>and @ad<"20030801" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/16 16:03 |
| S85 | 2       | "20040097246"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2006/11/17 09:23 |
| S87 | 2       | "20050086234"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 12:48 |
| S86 | 6       | "687218".ap.   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 12:48 |
| S1  | 1652765 | computer   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 12:49 |
| S89 | 2       | "5774588".pn.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 14:45 |
| S88 | 2       | "20050086234"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 14:45 |
| S2  | 47709   | pda\$1 and phone\$1  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 15:24 |

## EAST Search History

|     |        |  |   |    |     |                  |
|-----|--------|--|---|----|-----|------------------|
| S96 | 465578 | S95 and string\$1 or vector\$1             | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 15:25 |
| S94 | 2899   | "707".clas. and (pda\$1 and<br>phone\$1)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 15:25 |
| S93 | 62     | S91 and (string\$1 or vector\$1)           | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 15:25 |
| S92 | 465184 | S91 and string\$1 or vector\$1             | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 15:25 |
| S90 | 290    | 707/100.ccls. and (pda\$1 and<br>phone\$1) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 15:25 |
| S98 | 451    | S97 and compar\$4                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 15:26 |
| S97 | 607    | S95 and (string\$1 or vector\$1)           | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/04/18 15:26 |
| S99 | 86534  | pda\$1 and phone\$1                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:27 |



## EAST Search History

|          |       |                           |   |    |     |                  |
|----------|-------|---------------------------|---|----|-----|------------------|
| S3       | 28589 | S2 and @ad<"20031001"     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:27 |
| S10<br>5 | 8555  | bit near2 vector\$1       | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:28 |
| S10<br>4 | 17513 | S102 and @prad<"20031001" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:28 |
| S10<br>3 | 15193 | S102 and @rlad<"20031001" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:28 |
| S10<br>1 | 17513 | S99 and @prad<"20031001"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:28 |
| S10<br>0 | 15193 | S99 and @rlad<"20031001"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:28 |
| S11      | 5947  | S10 and @ad<"20031001"    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:28 |
| S8       | 28645 | S7 and @ad<"20031001"     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:28 |

## EAST Search History

|      |       |   |   |    |     |                  |
|------|-------|---|---|----|-----|------------------|
| S110 | 24709 | S108 and @prad<"20031001"                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:29 |
| S109 | 16979 | S108 and @rlad<"20031001"                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:29 |
| S108 | 68415 | (symbol\$1 with (email or address or number)) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:29 |
| S107 | 1438  | S105 and @prad<"20031001"                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:29 |
| S106 | 2516  | S105 and @rlad<"20031001"                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:29 |
| S112 | 24709 | S108 and @prad<"20031001"                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:30 |
| S111 | 16979 | S108 and @rlad<"20031001"                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:30 |
| S24  | 43230 | S23 and @ad<"20031001"                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:30 |

## EAST Search History

|          |        |   |   |    |     |                  |
|----------|--------|---|---|----|-----|------------------|
| S11<br>7 | 114913 | one adj bit   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:31 |
| S11<br>6 | 83     | S113 and @prad<"20031001"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:31 |
| S11<br>5 | 228    | S113 and @rlad<"20031001"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:31 |
| S11<br>4 | 228    | S113 and @rlad<"20031001"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:31 |
| S11<br>3 | 745    | nonalphanumeric or<br>non?alphanumeric                                    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:31 |
| S39      | 82993  | S38 and @ad<"20030901"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:31 |
| S29      | 442    | S28 and @ad<"20031001"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:31 |
| S12<br>0 | 2321   | ((symbol\$1 near3 represent\$1)<br>near3 (email or address or<br>number)) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:32 |

## EAST Search History

|          |       |                           |   |    |     |                  |
|----------|-------|---------------------------|---|----|-----|------------------|
| S11<br>9 | 39682 | S117 and @prad<"20030901" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:32 |
| S11<br>8 | 28570 | S117 and @rlad<"20030901" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:32 |
| S42      | 1487  | S41 and @ad<"20030601"    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:32 |
| S12<br>2 | 897   | S120 and @prad<"20030601" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:33 |
| S12<br>1 | 652   | S120 and @rlad<"20030601" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:33 |
| S12<br>9 | 1438  | S127 and @prad<"20031001" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |
| S12<br>8 | 2516  | S127 and @rlad<"20031001" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |
| S12<br>7 | 8555  | bit near2 vector\$1       | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |

## EAST Search History

|          |       |   |   |    |     |                  |
|----------|-------|---|---|----|-----|------------------|
| S12<br>6 | 6     | S124 and @prad<"20030601"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |
| S12<br>5 | 41    | S124 and @rlad<"20030601"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |
| S12<br>4 | 90    | S123 and alphanumeric   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |
| S12<br>3 | 2317  | S120 and ((symbol\$1 near3<br>represent\$1) near3 (address or<br>number)) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |
| S57      | 5947  | S56 and @ad<"20031001"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |
| S46      | 60    | S45 and @ad<"20030601"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:34 |
| S13<br>2 | 12713 | S130 and @prad<"20030601"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:35 |
| S13<br>1 | 9179  | S130 and @rlad<"20030601"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:35 |

## EAST Search History

|          |       |   |   |    |     |                  |
|----------|-------|---|---|----|-----|------------------|
| S13<br>0 | 31714 | symbol\$1 with group\$1   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:35 |
| S67      | 19739 | S66 and @ad<"20030601"  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:35 |
| S13<br>6 | 9     | ((portable near3 device\$1) with<br>(keyword\$1 ) ) and<br>@prad<"20030801" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:36 |
| S13<br>5 | 2     | ((portable near3 device\$1) with<br>(keyword\$1 ) ) and<br>@rlad<"20030801" | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:36 |
| S13<br>4 | 54    | (wireless with keyword\$1) and<br>@prad<"20030601"                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:36 |
| S13<br>3 | 34    | (wireless with keyword\$1) and<br>@rlad<"20030601"                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:36 |
| S84      | 112   | (wireless with keyword\$1) and<br>@ad<"20030601"                            | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:36 |
| S83      | 15    | ((portable near3 device\$1) with<br>(keyword\$1 ) ) and<br>@ad<"20030801"   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:36 |

## EAST Search History

|          |      |  |   |    |     |                  |
|----------|------|--|---|----|-----|------------------|
| S14<br>2 | 570  | S140 and @prad<"20031001"                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:37 |
| S14<br>1 | 1504 | S140 and @rlad<"20031001"                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:37 |
| S14<br>0 | 5100 | "707".clas. and (pda\$1 and<br>phone\$1)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:37 |
| S13<br>9 | 31   | S137 and @prad<"20031001"                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:37 |
| S13<br>8 | 103  | S137 and @rlad<"20031001"                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:37 |
| S13<br>7 | 339  | 707/100.ccls. and (pda\$1 and<br>phone\$1) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:37 |
| S95      | 1390 | S94 and @ad<"20031001"                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:37 |
| S91      | 119  | S90 and @ad<"20031001"                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:37 |

## EAST Search History

|          |       |                             |   |    |     |                  |
|----------|-------|-----------------------------|---|----|-----|------------------|
| S14<br>5 | 40    | S112 and 707/100.ccls.      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:39 |
| S14<br>4 | 4     | S107 and 707/100.ccls.      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:39 |
| S14<br>3 | 339   | S102 and 707/100.ccls.      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:39 |
| S10<br>2 | 86534 | pda\$1 and phone\$1         | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:39 |
| S14<br>6 | 5791  | L15and 707/100.ccls.        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 10:40 |
| S14<br>7 | 4     | S129 and 707/100.ccls.      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 14:41 |
| S14<br>9 | 2     | "20050086234" and symbol\$1 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 15:10 |
| S14<br>8 | 7     | "687218".ap.                | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2007/11/16 15:10 |